



# BASIC AWARENESS TRAINING





# ALL TOGETHER NOW!

## **Groan.**



ALL TOGETHER NOW!

This is the best  
thing since  
sliced bread!!!!



# AFSO 21

What is it?

Why should we care?

Where does it apply?

What am I going to get out of this?

When do we have to start?

Cool! How do we get started?



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# WHAT IS AFSO21?

Air Force unique model for continuous process improvement

- Increased Operational Support
- Killing Non-value-Added Work
- Clean Sheet Thinking
- Improving How We Operate

It's all about the RESULTS



# What is AFSO21?

A combination of process improvement methodology & tools

- Primary AFSO21 methodology (80%) is Lean Principles
- Remaining 20%
  - Some 6 Sigma
    - Improvement and measurements of specific processes
    - Statistical validation
  - Some Theory of constraints
    - Elimination of the most significant constraint in sequence
    - Big picture focus
  - Some Business Process Reengineering
    - Longer term process redesign



# What Do We Mean by “Lean?”

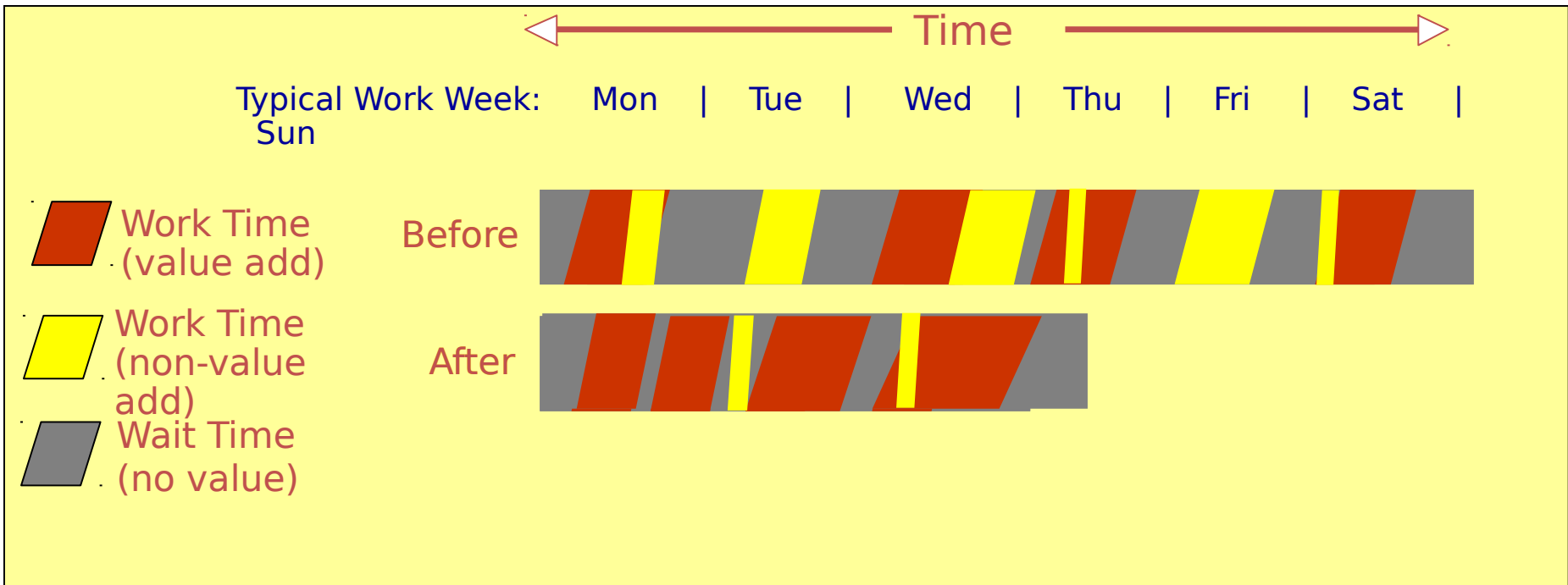
- The goal of lean is the endless pursuit of the identification and elimination of waste, adapting to change, and continuous process improvement.
- Waste = non-value added activity

What does “non-value added” mean?





# What do We Mean by “Lean?”



**LEAN is the endless pursuit of identification and elimination of waste, adapting to change, and continuous process improvement.**



# Lean Concepts & Principles



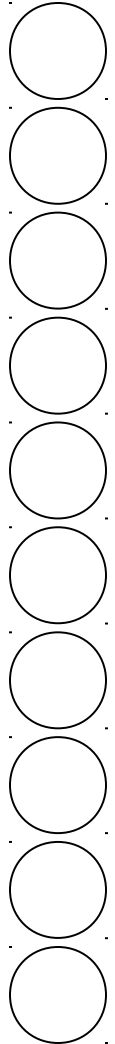
Key Concept

## The Five Guiding Principles of Lean

- 1. Specify Value**
- 2. Identify the Value Stream**
- 3. Flow**
- 4. Pull**
- 5. Perfection**

# Flow: Batch and Queue

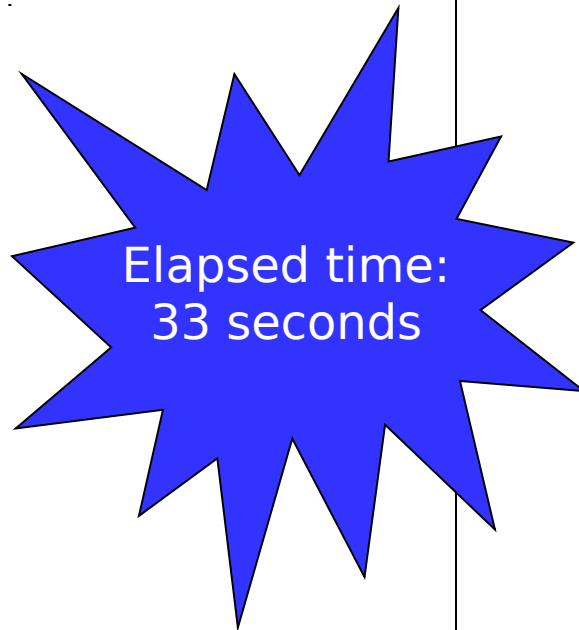
Process A



Process B

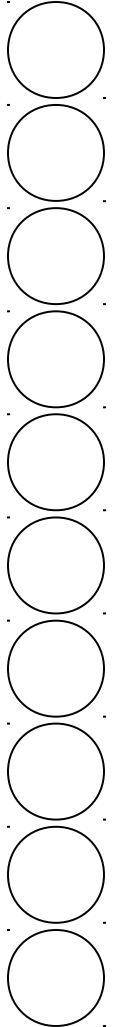
Process C

End User



# Single-Piece Flow

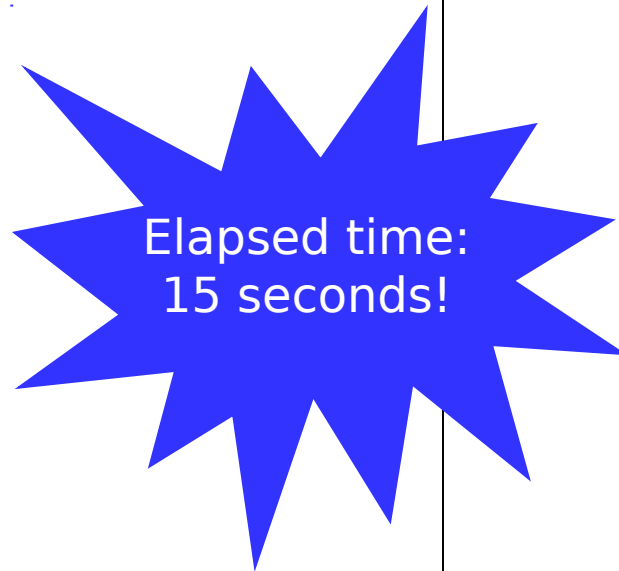
Process A



Process B

Process C

End User





# Two Major Lean Tools

- 6S
- Standard Work



# 6S

- **Sort:** *Eliminate all excess materials in the work area*
- **Straighten:** *Everything is positioned in a specific, consistent, organized manner*
- **Scrub** (“sweep” or “shine” sometimes used):  
*Everything is clean, allowing undesirable changes to be immediately visible*
- **Standardize:** *Keeping the area organized, orderly, and clean, making standards visual and obvious*
- **Sustain:** *Education and communication to ensure that everyone continues to follow the 6S standards*



# Standard Work

- Best practice
  - Before standard work is accomplished, find the best practice in the area
    - May be a combination of more than one persons work
- Reduction of variation
  - Why it is important to reduce variation in a process
    - No consistency so no predictability...flow suffers
- Documentation/measurement
  - Provide step-by-step instructions of the best practice to include pictures and diagrams so that all workers in an area can easily duplicate



# The Eight Types of Waste

Lean identifies 8 types of waste:

1. Defects

•

2. Over production

D

3. Waiting

•

4. Non-standard & Over processing

O

5. Transportation

•

6. Injuries

W

7. Motion

•

8. Excess Inventory

N

• T





# Waste

- Waste may not be as easy to recognize as you think!
- In most traditional processes over 80% of the steps done by people and machines are waste.
  - Moving, piling, un-piling, fixing, walking, copying, documenting, CYA-ing, meeting, loading, unloading, traveling, discussing...etc.
  - **Bottom line:** If it doesn't add value to the end-product; it's waste
- “Waste” isn't a judgment or a criticism!
  - To understand what is considered waste, ask “*if this step went away, would the customer know or care?*”



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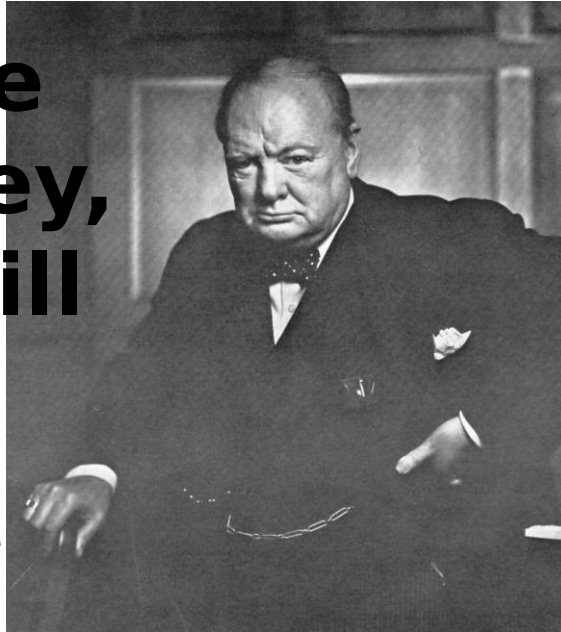
Cool! How do we get started?



# WHY SHOULD WE CARE?

**“Gentleman, we are out of money, therefore we will have to think.”**

(Winston Churchill to Parliament during the darkest period of World War II.)

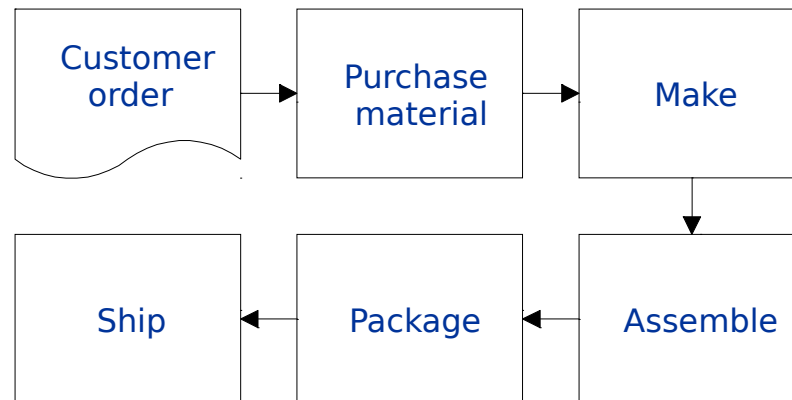


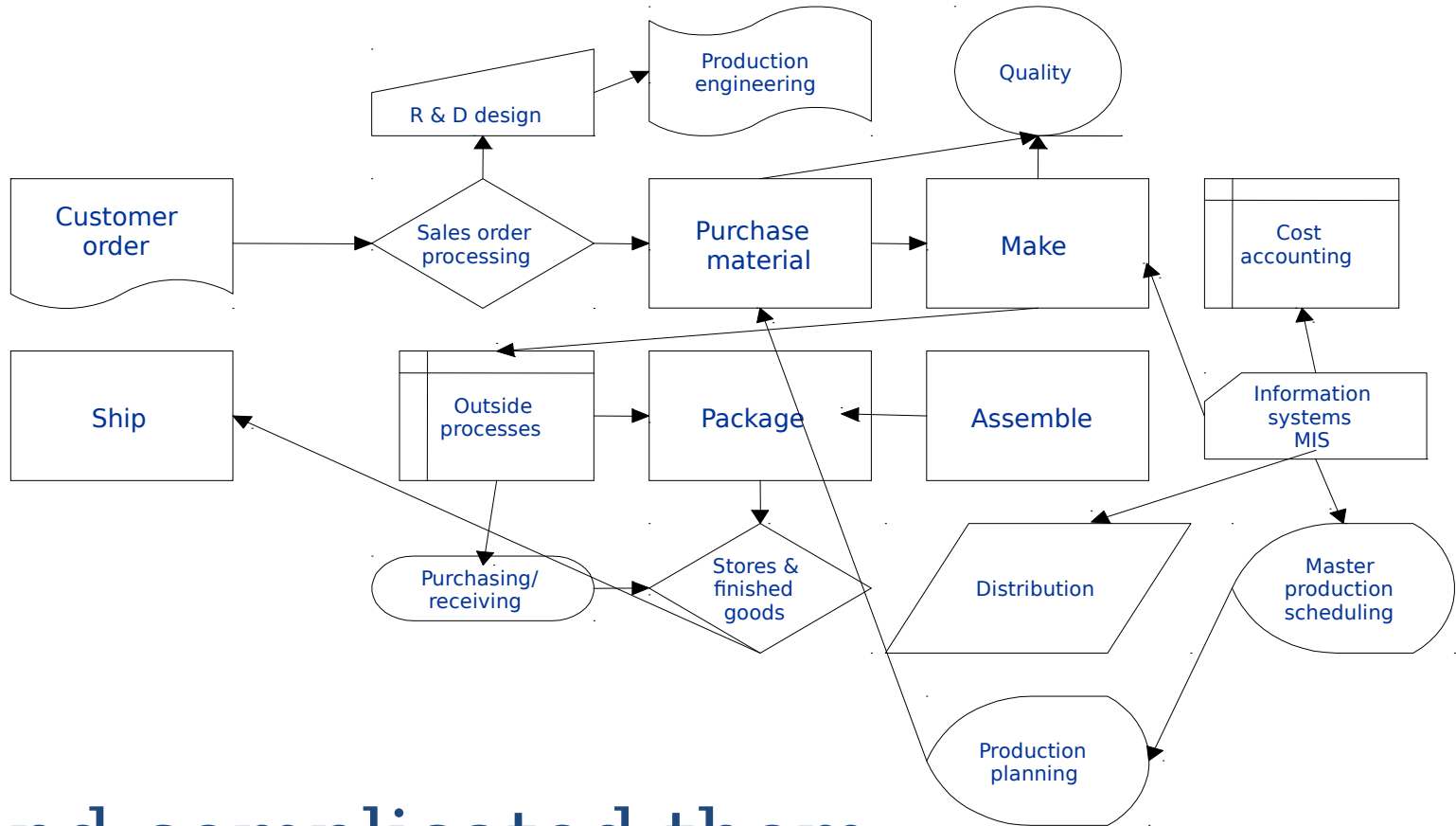
Three components of the practical: ends, ways, and means

Given the current ends and assuming limited means.....  
..... the military must find new ways.



# We've taken simple processes....



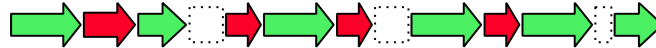


## ...and complicated them



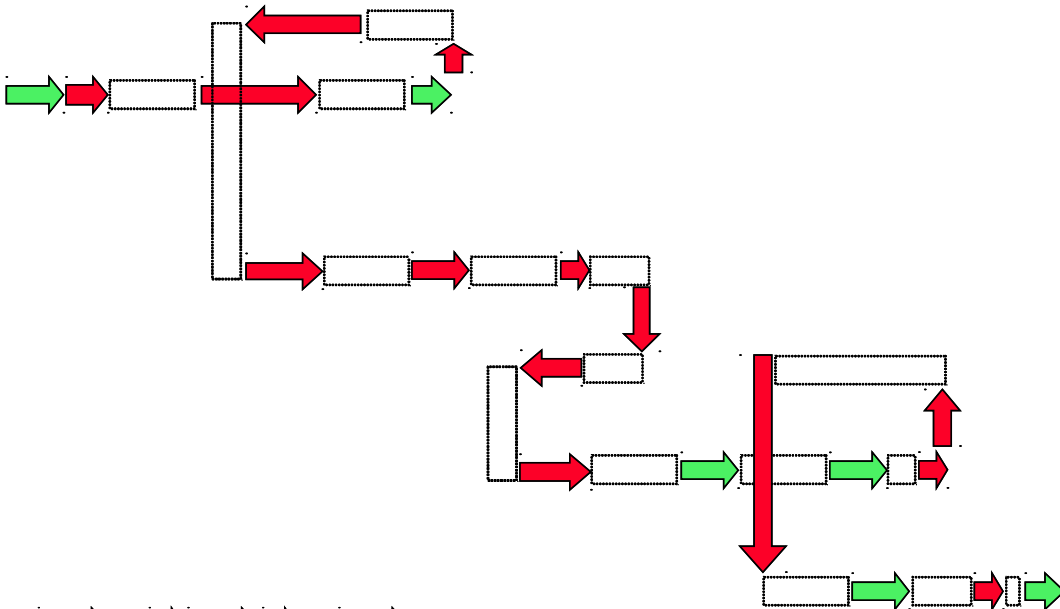
## Any Process Has At Least 3 Versions

What we Think it is



...

What it Actually is ...



What is Achievable



...

All Processes Have Opportunities for Improvement



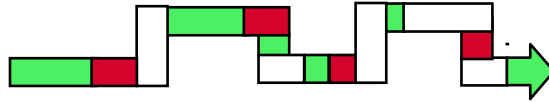
*There is Only One “Best Way” to Perform a Process*





# WASTE

Anything that does not add value to the product - service



Copying

Equipment Problems

Sign-offs - Approving

Hand-Offs

Paperwork - Waiting

Re-Dos

Traveling - Walking

Logging - Filing

Messy Area

Person - Waiting

Looking for Things

Bending - Reaching

Opportunities to Remove Waste in All Value Streams





## CAUSES OF WASTE: HOW DID IT HAPPEN?

Was the process always wasteful?

- Changes to treat a symptom rather than a problem
- Inspecting to find a problem to fix rather than fix cause of the problem
- Temporary fix becoming permanent
- Not updating documentation to correspond with new requirements
- Programmers not mindful of waste
- Engineering not communicating with users
- “Cover my rear”
- Surges
- Batches are better
- Loose sight of Value added vs. Non-value added tasks
- Work area becoming cluttered
- Not utilizing new technology
- Paper work
- Inconsistent programming between programmers
- Other ?



# Why AFSO21?

**"We need to focus on continuing efforts at the MAJCOM down to the wing and across functional levels to streamline efforts, drive down costs and improve capabilities. We can't be static."**

**Secretary of the Air Force Michael Donley**



# AFSO 21

What is it?

Why should we care?

Where does it apply?



What am I going to get out of this?

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Cool! How do we get started?



# EVERYWHERE. SO....

- Be creative
- Look for ideas continually
- Imagine uncharted territories
- Roam around the world in your mind
- Visualize situations
- Handle multiple variables
- Prioritize a combination of variables
  - Machines, materials, methods, manpower, environment
- *Never* criticize
  - The crazy solution might just be the next sticky note



# INNOVATION

What do Bono and Tom Cruise have in common?



- They both look cool wearing sunglasses

What does that have to do with the DoD?

- Number of eye injuries on the increase- 16% of casualties are attributed to eye injuries
- What was root cause? - sand, dust, debris from helicopters, smaller shrapnel fragments?
- What is typical age of soldier?
- Issued glasses were too “ugly” – FL seniors should be wearing
- Contracted with Wiley for ballistic eye protection
- More consistent use- automatic drop in injuries





# DUH.



- Innovative solution to critical problem
- 5 Whys is an effective tool
- Significant reduction in overall Injuries and...
- Injury severity







# LEAN

## What can we learn from NASCAR? *Formula 1?*



Both are very efficient in their pit stops- *they are LEAN*

- *8-14 seconds to change 4 tires, receive fuel, make adjustments*

What does that have to do with the DoD?

- We are terribly inefficient in our depot and field maintenance
- Logistics footprint is huge, Sys. design needs improved



# "PIT STOP ENGINEERING" HAS BEEN ADOPTED BY THE ARMY



- UH60 Blackhawk utilizes laminate windshield tear offs
  - *Simple solution to tactical problem- sandy, dusty environment*
  - *Replace Mylar instead of windshield, faster , <\$, increased readiness*





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# AFSO21 BENEFITS: ORGANIZATIONAL & PERSONAL

- Improved Effectiveness – Improved readiness; increased agility
- Improved Efficiency – Fewer resources expended; reduced tempo, increased capacity
- Improved Quality – Increased accuracy, less rework
- Improved Safety Performance – Less accidents, lower mishap rates
- Improved Morale – Higher retention and job satisfaction; Increased time and focus by Airmen on their most critical mission duties



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YESTERDAY.

But it's not hard to start!

What totally frustrates  
you?

What makes you late?

What wastes your time?



# AFSO21 INVOLVES CULTURAL CHANGE

- Problems are seen as improvement opportunities
- People are not problems; They are problem solvers!
- Emphasis is placed on finding solutions and innovation instead of assigning blame
- Problems are identified because of increased trust
- March unnecessary work out the door! Kill WASTE!



# AFSO 21

What is it?

Why should we care?

Who is responsible?

Where does it apply?

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# Your Role ??

- Use AFSO21 “goggles” to see opportunities
- Raise the issues
  - Improve what you control
  - Elevate other issues to leadership
- Participate on events
  - Value Stream Mapping Event (VSM)
  - Rapid Improvement Event (RIE)
- Be ready for change...necessary in continuous improvement atmosphere



# Your Role ??

- Look at your own work areas; Seek ideas from others who have used AFSO21 tools
- Submit your ideas to local POCs and be ready to get involved in AFSO21 improvement events
- Watch for AFSO21 news from Wing level, MAJCOM, and on AF Link
- To learn more, check out the AFRC Portal for AFSO21 Smart Operations for the 21st Century:  
[www.my.af.mil/gcss-af/USAF/ep/globalTab.do?channelPageId=-1987903](http://www.my.af.mil/gcss-af/USAF/ep/globalTab.do?channelPageId=-1987903)





# Lean Thinking Recap

*"We get brilliant results from average people managing a brilliant process. Others get average results from brilliant people managing broken processes."*

Taiichi Ohno, Toyota

## 5 Principles

1. Specify Value
2. Identify the Value Stream
3. Flow
4. Pull
5. Perfection

## 2 Major Lean Tools

1. 6S
2. Standard Work

## 8 Types of Waste

1. Defects
2. Overproduction
3. Excess Inventory
4. Motion
5. Non-value-adding Processing
6. Transportation
7. Waiting
8. Injuries



# AFSO 21

# Pop quiz!



# AFSO 21

# What is AFSO21?



ONE MORE TIME!

It is the best  
thing since  
sliced bread!!!!



Was that so hard?

AFSO21

Air Force Smart Ops For The 21st Century

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